**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

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TQ DELTA, LLC,

                Plaintiff,

v.

COMMSCOPE HOLDING COMPANY,
INC., COMMSCOPE, INC., ARRIS US
HOLDINGS, INC., ARRIS SOLUTIONS,
INC., ARRIS TECHNOLOGY, INC., and
ARRIS ENTERPRISES, LLC,

                Defendants.

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Civil Action No.: 2:21-cv-00310-JRG

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**COMMSCOPE'S REPLY IN SUPPORT OF ITS MOTION FOR SUMMARY
JUDGMENT OF NON-INFRINGEMENT OF FAMILY 3 (Dkt. No. 336)**

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TABLE OF EXHIBITS

Exhibit No.	Description
Ex. A	Excerpt of Dkt. No. 172, Markman Transcript, dat[1]ed June 1, 2022
Ex. B	Excerpt of U.S. Patent No. 7,844,882 ("'882 Patent")
Ex. C	Excerpt of U.S. Patent No. 8,276,048 ("'048 Patent")
Ex. D	Excerpt of Cooklev Opening Report, dated August 29, 2022
Ex. E	Excerpt of ITU-T G.993.2 Standard "Very high speed digital subscriber line transceivers 2 (VDSL2)"
Ex. F	Excerpt of Yu Deposition, dated August 24, 2022
Ex. G	Excerpt of Cassiers Deposition, dated August 25, 2022
Ex. H	Excerpt of Ransom Rebuttal Report, dated November 18, 2022
Ex. I	U.S. Patent No. 7,844,882 ("'882 Patent")
Ex. J	U.S. Patent No. 8,276,048 ("'048 Patent")

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[1] This exhibit list is inclusive of all exhibits cited by CommScope in its moving papers and this Reply brief.

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I.   INTRODUCTION

TQ Delta's Response makes one thing clear: TQ Delta intends to tell the jury that a message that specifies a ***minimum*** amount of memory meets a claim limitation requiring a message that specifies a ***maximum*** amount of memory. Dr. Cooklev admitted that the accused O-PMS message corresponds to the ***minimum*** amount of memory required by the deinterleaver, and TQ Delta argues that this minimum can satisfy the requirement of a maximum. Resp. at 10–11. That position fundamentally misapprehends the plain and ordinary meaning of the term "a message . . . specifying a ***maximum*** number of bytes of memory that are available to be allocated to a deinterleaver," which requires an upper bound (a maximum) in the message. Defendants previewed this concern at the claim construction hearing, where the Court and TQ Delta responded as follows:

> THE COURT: … Having heard that, Mr. Davis [for TQ Delta], let me hear your response. I'm not sure how you specify a maximum number by specifying a minimum number, but go ahead and tell me what your reaction is.
>
> MR. DAVIS: I'm not either, Your Honor. And what I heard Mr. Stevens [for Defendants] say is he wants to basically decide an infringement issue without any record of it, and he's -- he is assuming that we are going to be pointing -- what I heard him say is they're going to point to something that says 'minimum.' You know, I'm not sure what he's referring to, but the claim says 'maximum.' So it seems to me, like, if we're at the summary judgment stage and we're pointing to something that says 'minimum' and doesn't have anything to do with 'maximum,' then, you know --
>
> THE COURT: You may be in a bad position.
>
> MR. DAVIS: We may be in a bad position. That's correct, Your Honor.

Ex. A at 88:4–22.

TQ Delta is indeed in a bad position, and this issue warrants resolution now.[2] Under *O2 Micro International Ltd. v. Beyond Innovation Technology Co.*, a construction of "'plain and ordinary

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[2] In the Court's *Markman* Order, the Court stated that it "fully expects the parties to raise *no later than at the summary judgment stage* any underlying claim construction issue regarding this term that arises because of the particular infringement issues presented in this case." Dkt. No. 169 at 59 (emphasis in original).

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meaning' may be inadequate . . . when reliance on a term's 'ordinary' meaning does not resolve the parties' dispute." 521 F.3d 1351, 1361 (Fed. Cir. 2008). Here, the parties dispute whether a claim term requiring "a message . . . specifying a *maximum* number of bytes of memory that are available to be allocated to a deinterleaver"—construed by this Court to have its "plain meaning"—can be satisfied by a message that specifies a *minimum* amount of memory. In other words, the parties dispute whether the limitation requires that the message have *an upper bound* (a maximum) on the number of bytes that are available to be allocated to the deinterleaver. CommScope respectfully asks this Court to construe this term to require that upper bound (maximum), and, consistent with that construction, grant summary judgment of no infringement.

II.   ARGUMENT

TQ Delta broadly interprets the "plain meaning" of the claim term requiring a message specifying a "maximum" to encompass a message that corresponds to the *minimum* bytes required by a deinterleaver, meaning that the message specifies a *lower* bound but not an *upper* bound. *See* Resp. at 10–11. TQ Delta's theory is that, ████████████████████████████████

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████████████████████████   But that reads out the language of the claim, which expressly requires a message specifying the "maximum number of bytes of memory that are available to be allocated to a deinterleaver," i.e., a message with an upper bound on bytes that can be allocated to a deinterleaver. Properly construed, CommScope's accused products do not infringe the Family 3 patent claims.

> **A. TQ Delta Will Improperly Tell the Jury That a Message Specifying a Maximum Number of Bytes of Memory Allocated to the Deinterleaver Should Broadly Encompass a Message That Does Not Include an Upper Bound (a Maximum) on the Number of Bytes of Memory.**

The relevant claim limitation requires three things: (1) that the message "specify[] a *maximum*"; (2) that the message specify that maximum in a "*number of bytes of memory*"; and

[REDACTED]

(3) that the specified maximum number of bytes of memory be *"available to be allocated to a deinterleaver."* Correctly construed, TQ Delta cannot establish that CommScope's products meet all three requirements.

TQ Delta accuses the max_delay_octet field within the O-PMS message of meeting this limitation. Ex. D ¶¶ 1178–79, 1201. To be clear, this message specifies merely a *delay* (which TQ Delta does not dispute), and not the required maximum number of bytes that *are available to be allocated to a deinterleaver*. TQ Delta thus knows that it cannot rely on the max_delay_octet field alone to meet the claim limitation because the third requirement (noted above) is missing.

To try to meet that third requirement, Dr. Cooklev attempted to convert the *delay* to an amount of memory *available to be allocated to a deinterleaver*. To do so, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] As Dr. Cooklev admitted in his report, setting the memory to $\frac{maxdelayoctetDS0}{2}$ is actually setting it to the *minimum* amount of memory. *Id.* ¶ 207 ("The minimum amount of memory required in a transceiver . . . is $\frac{MAXDELAYOCTET}{2}$ octets.").[3] Accordingly, by [REDACTED]

[REDACTED]

[REDACTED], Dr. Cooklev admits that the delay no longer satisfies the first requirement—that the message specify a *maximum*. It instead specifies a *minimum*.

TQ Delta showed its cards in its Response, which explains this irreconcilable difference between the VDSL2 standard and Dr. Cooklev's opinion. There, TQ Delta alleges that [REDACTED]

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[3] It is not significant that *MAXDELAYOCTET* refers to the aggregate delay of the four pathways, including *maxdelayoctet_{DS,0}*, *maxdelayoctet_{DS,1}*, *maxdelayoctet_{US,0}*, and *maxdelayoctet_{US,1}*. If the aggregate maximum delay is equal to the minimum required memory, each individual maximum delay is likewise equal to each individual minimum required memory. TQ Delta indicates the same in its Response. *See* Resp. at 10.

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█ █████████████ Resp. at 10–11 (emphasis in original). TQ Delta's theory is thus that ████████████

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████████████████████████████████████ this theory removes the claim

requirement that the message specify a *maximum* (because there is no upper bound on this message).

Under the correct construction, this Court need not decide whether there is a dispute of fact

regarding whether the message *functions* as a maximum. The correct inquiry is whether the actual

message has an upper bound (a maximum) for the amount of memory that can be allocated to the

deinterleaver. If the message has only a lower bound—as here—then it does not satisfy the term.

B. The Patent Supports a Construction Requiring That a Message Specifying a Maximum Number of Bytes of Memory Must Have an Upper Bound.

The plain language of claim 13 of the '882 patent and claim 5 of the '048 patent makes clear

that the message "specifying a maximum number of bytes of memory that are available to be

allocated to a deinterleaver" must have an upper bound. Both of these claims additionally recite that

the actual allocation of memory to the deinterleaver "does not exceed the maximum number of bytes

specified in the message," i.e., the allocation is limited by an upper bound. Ex. I at 12:30–32; Ex. J

at 11:17–19. If the message specified only the *minimum* number of bytes of memory available to be

allocated to the deinterleaver, this additional claim language would be meaningless.

The common specification of the '882 and '048 patents likewise contemplates determining a

maximum amount of shared memory that can be allocated—never a *minimum*. Indeed, the

specification explains that "an exemplary aspect of the invention relates to determining the maximum

amount of shared memory that can be allocated to one or more interleave[r]s or deinterleavers." Ex. I

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at 2:1–4. The specification further explains that there may be times where the "memory is constrained," so it must communicate a "maximum shared memory." *Id.* at 7:34–36. In the example set forth in the specification, the maximum shared memory was "20 kBytes," thus providing an upper bound on the number of bytes of memory that may be allocated. *Id.* These disclosures—showing constraints on the memory size—support interpreting the plain meaning of the term "maximum" to mean what it says, namely, that there must indeed be an upper bound in the message, and that the upper bound must constrain the number of bytes of memory allocated to the deinterleaver. Notably, the specification never discusses or considers a maximum *delay* or use of a *minimum*.

C. TQ Delta's Remaining Arguments Fail.

CommScope is not estopped from claiming noninfringement of the Family 3 patents for the reasons explained in its Opposition to TQ Delta's Motion for Summary Judgment (Dkt. No. 378). The prior Delaware rulings are likewise insufficient justification for denying summary judgment here, as the Delaware court and the jury did not have the benefit of the proper construction of this claim limitation, nor the admissions made by TQ Delta to this Court. Finally, TQ Delta repeatedly attempts to manufacture disputed facts (as it did in Delaware) to escape summary judgment. But none of those facts need be decided in order to resolve this motion.[4] Instead, the relevant inquiry is whether, under the correct construction, the max_delay_octet field in the O-PMS message has *an upper bound on the number of bytes that are available to be allocated to the deinterleaver*.

III.   CONCLUSION

For the reasons set forth above, CommScope respectfully requests summary judgment of non-infringement of the Family 3 Asserted Claims.

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[4] For the avoidance of doubt, CommScope does not agree that TQ Delta's recitation of alleged "uncontested" facts are indeed uncontested. Rather, those facts are not relevant to the inquiry here and so need not be addressed.

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Dated this 17th day of January, 2023

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the above and foregoing document has been

served on January 17, 2023, to all counsel of record via electronic mail.

/s/ Eric H. Findlay
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